

## A NEW FISH, REPUTED TO BE POISONOUS, FROM QUEENSLAND.

BY GILBERT WHITLEY, ICHTHYOLOGIST, THE AUSTRALIAN MUSEUM, SYDNEY.\*

(Plate XXVI; Text-Figure 1.)

There are few Australian fishes which, when eaten fresh, are poisonous as food. Toadfishes of the family Tetraodontidæ and Poreupine Fishes are well known as poisonous fishes so that nowadays few persons try to eat them, but there are other fishes, allied to the Hussars (family Lutjanidæ), the Snappers of our tropical waters, whose flesh is at times edible and at other times very poisonous.

At the beginning of the seventeenth century, the Spanish navigator, Pedro Fernandez de Quiros, remarked on poisonous Sparoid fishes of the Pacific<sup>1</sup> allied to the European *Pagrus*. Many years later, the naturalists on Cook's voyages, George Forster<sup>2</sup> and William Anderson<sup>3</sup> also encountered these deceptive fishes, whilst Cook himself was severely poisoned through eating a toadfish in New Caledonia in 1774.

The Chinaman Fish of North Queensland, whose flesh, at certain unexplained periods, is poisonous, was earlier described in these Memoirs<sup>4</sup>, where it was named as a new genus and species, *Paradicichthys venenatus*. An account of its skull was later prepared by Dr. H. L. Kesteven, but this has not yet been published. Now, a second reputedly poisonous fish has been forwarded to me from Helix Reef, off Townsville, by the Queensland Museum, for identification and report. This is a species of Hussar or Sea Perch, known as the Red Bass, which, according to its donor, Mr. George Coates, "has the reputation of producing a form of muscular paralysis of a rather severe nature." Mr. Coates also remarks that "others of the same kind together with Chinaman fish have at various times been displayed for sale in the local fish shops." This fish is quite different from the Chinaman Fish (which has the soft dorsal

---

\*(Contribution from The Australian Museum.)

<sup>1</sup> G. A. Wood, *Discov. Austr.* 1922, p. 470 and Stevens, *New Light Discov. Austr.* 1930, p. 127.

<sup>2</sup> Forster, *Obs. Voy. World*, 1778, pp. 201 and 642; *Descr. Anim.* (ed. Lichtenstein), 1844, pp. 254 and 282.

<sup>3</sup> W. Anderson, *Account Poisonous Fish*, a letter dated 23 April 1776; also Cook, *Voy. S. Pole*, ed. 3, ii, 1779, p. 112.

<sup>4</sup> Whitley, *Mem. Qld. Mus.* x, 1930, p. 13, pl. i, fig. 1. See also *The Australian Museum Magazine*, iv, 1932, p. 394, where Dr. P. S. Clarke's notes, from the medical viewpoint, are reproduced.

fin much higher than the spinous, a shorter pectoral fin, smaller scales, more convex upper profile of head, no vomerine teeth and tail-fin not strongly forked), and belongs to a new species of the extensive genus *Lutjanus* which includes some excellent food-fishes.

Family *LUTJANIDÆ*.

Genus *LUTJANUS* Bloch, 1790.

**LUTJANUS COATESI** sp. nov. (Red Bass).

(Plate XXVI, fig. 2 and text-fig.)

Br. 6. D. X/14 (15); A. iii/9; P. i/16; V. i/5; C. 14.

L. Lat. 50; L. tr. 10/1/19 to 5/1/7 on caudal peduncle.

Head (194 mm.) 2.6 in length to hypural joint (514).

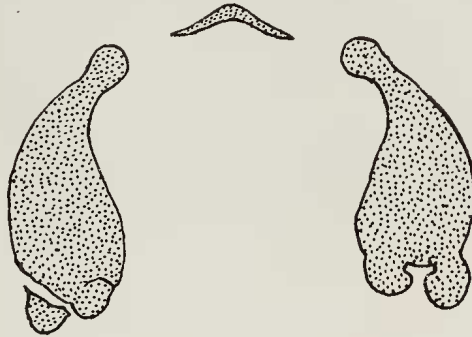
Eye (34) 5.7, snout (70) 2.7, maxillary (84) 2.3, preorbital (44) 4.4, interorbital (59) nearly 3.3, longest pectoral ray (138) 1.4, depth of caudal peduncle (60) 3.2, and fourth dorsal spine (61) nearly 3.2 in head.

Head rather long and somewhat pointed, its upper profile convex. Eye large, apparently resting on a subocular shelf; interorbital broad, convex over the eyes and flattened above. A conspicuous fossa before the eye extends to the nostrils, of which the posterior are sunken and with an oval outline, and the anterior rounded and with a short tube-like rim. Preorbital deep. Preoperculum serrated and with a distinct, though not large, notch to receive the knob over the interoperculum. Operculum entire, with a weak flat spine at its angle, where there is a narrow opercular flap. Interoperculum entire, its margin undulating and with a single frill where it joins the chin. The head is naked except for two rows of scales on the nape and scaly areas on the preoperculum, interoperculum, and operculum. These opercular scales are bilaterally asymmetrical in the specimen before me, the left side of the head having evidently been damaged at some time. On the right side, there are up to seven more or less upright rows on the preoperculum and slightly more on the operculum. The naked upper part of the head bears minute granular papillæ and the tips of the jaws are rugose.

Jaws subequal, the lower slightly protruding. Maxillary partly sheathed by preorbital, without supplemental bone, its extremity truncate, with rounded angles and reaching below anterior margin of eye. Mandibles with an arched ascending ramus.

The dentition is very strong yet partly concealed by the coriaceous lips. A small curved canine on each side of the premaxillary symphysis is followed by another nearly twice as long, then, after a short gap, comes a single row of short, strong, pointed teeth along each side of the upper jaw; none of

the teeth directed outward. Behind these teeth are broad bands of rough villiform teeth which extend right across the symphysis. In the lower jaw the teeth are caniniform on each side of the mandibular symphysis, followed by two large canines (not quite so long as the longest pair in the upper jaw) and a single row of sharp pointed teeth. Behind these are bands of villiform teeth as in the upper jaw. A wide  $\Delta$ -shaped band of villiform teeth on the vomer, without a median posterior shaft, and patches of rougher villiform teeth on the palatines, which are shaped as in the accompanying figure. A buccal flap present in each jaw. Palate longitudinally plicate. Tongue large, fleshy, rounded, without teeth.



Text-figure 1.—*Lutjanus coatesi*, sp. nov. Palatal dentition of Holotype. Natural size.

As the specimen has been gutted and cleaned, no details can be given concerning branchial arches, gillrakers, stomach contents, sex, etc. Pseudo-branchiae are present.

Body robust, its depth subequal to length of head or about one-third of the standard length but accurate measurement is impracticable. Large, regular, weakly ctenoid or ciliated scales cover the body and extend over the breast and onto the bases of all the fins except the spinous dorsal and the ventrals. Scales have 12 to 15 basal radiating striae, central portion rather like ground glass, circuli fine, apical denticles numerous and becoming frayed at edge of scale. An axillary ventral scale. Fifteen predorsal scales, which do not reach the level of the eyes, and about fifty scales with obsolescent tubes on the lateral line, which ceases at the root of the caudal fin. The scale-rows all slope obliquely upwards and backwards above the lateral line but run in a longitudinal direction below it. Suprascapular denticulations obsolete.

Dorsal fins continuous but notched, the fourth or fifth spines were probably the longest, but the fifth appears to have been damaged and is shortened in this specimen. The base of the spinous dorsal is longer than that of the soft, which has a rounded margin; none of the rays is as long as the longest dorsal spine. Anal commencing below anterior dorsal rays, its base is shorter than that of the soft dorsal. Second anal spine very thick but not so long as third; the anterior anal rays are about twice as long as the

posterior ones, none of which is produced. Pectoral broad and slightly falcate, the fifth ray longest and reaching to the level of the anal origin. Ventrals considerably shorter than pectorals and barely reaching vent. Caudal forked, almost entirely covered by scales.

*Colour*.—Mr. T. C. Marshall, of the Queensland Museum, made notes on the colours of the fish when it arrived at Brisbane, frozen in ice, from Townsville, as follows:—

“General colour rose doree. Colour of the back along top of head to tip of snout victoria lake. The dark shades of the back merged laterally into rose doree passing into eosine pink on the belly. Operculum mars yellow fading on the ventral surface to strawberry pink, which is the same colour as the preopercle. Eye peach red encircled with narrow border of cadmium orange. Inside of mouth, vomer, palate, etc. cream white faintly tinged with pink. Spinous dorsal with the spines blackish flushed between with scarlet. Soft dorsal maroon with flushes of scarlet. Anterior half of pectorals maroon, and rose doree on their posterior half. Ventrals and anal rose doree basally, passing into blackish on their outer edges. Caudal darker rose doree somewhat narrowly edged with black. Head with several small wavy lines and blotches of dark lavender, thickest in the preorbital areas. Each body scale with a boomerang-shaped patch, lighter than surrounding colour giving the fish a decidedly spangled appearance.

Colours taken from Ridgway's Color Standards and Nomenclature, 1912.”

After preservation in formalin, the general colour is dull greyish becoming whitish or yellowish on sides of head and body. Fins dark greyish, the lower parts of the pectorals and ventrals white. Inner axil of pectoral orange, or yellow, meeting the blackish dark area on the rays. Eye bluish. Teeth and inside of mouth white. The scales of the upper part of the body each with a pearly central spot. These spots form rows on the sides, until, towards the belly, the light areas form bands which are broader than their greyish interspaces. No dark blotch on sides below dorsal fin.

Described and figured from the holotype of the species, a specimen 514 mm. in standard length or rather more than two feet in total length.

*Locality*.—Helix Reef off Townsville, North Queensland. Presented by Mr. George Coates. Queensland Museum regd. no. I. 4977.

*Affinities*.—This species does not seem to agree with any in Bleeker's “Atlas Ichthyologique” or in Fowler's recent key.<sup>5</sup>

<sup>5</sup> Fowler, Bull. U. S. Nat. Mus. 100, xi, 1931, p. 86.

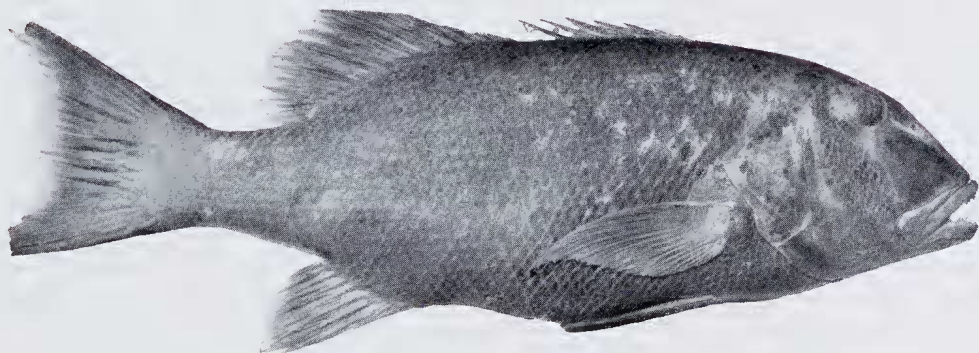


Fig. 1. The Chinaman Fish. *Paradicichthys venenatus* Whitley. Holotype.



Fig. 2. Red Bass, *Lutjanus coatesi* Whitley.  
Reduced to the same scale, from preserved specimens, for comparison.

Photographs: G. C. Clutton.

Face page 178.



The *Diacope rivulata* of Cuvier and Valenciennes<sup>6</sup> with second anal spine longer than the third, more elevated soft dorsal fin and several rows of nuchal scales and different coloration is only superficially similar; moreover, specimens from Port Moresby and the Andaman Islands in the Australian Museum have more strongly denticulated preoperculum and narrower bands of palatine teeth, also a prominent silver spot below dorsal fin.

Ogilby<sup>7</sup> recorded *Lutjanus gibbus* (Forsk.) from the "Torres Group" and his specimen may belong to this new species.

The Australian Museum has specimens labelled as *Lutjanus gibbus* (mostly small) from Samoa; Funafuti, Ellice Group; Hog Harbour, New Hebrides; and Port Moresby, New Guinea. These have the eye comparatively larger, preopercular notch deeper, and upper profile of head much less convex than in my new species. The lower jaw is included, and the specimens in general resemble Day's<sup>8</sup> figure of an adult, less than one foot long. The species was originally briefly described as "*Sciæna gibba*" by Forskal<sup>9</sup> from the Red Sea, as being red, with white spots on the scales and the back gibbous, etc.

Through the courtesy of Mr. John Shewan, Curator of the Macleay Museum, the University of Sydney, I have been enabled to examine the type-specimens of several of Sir William Macleay's species of *Mesoprion* and *Genyoroge* (= *Lutjanus*, *sensu latissimo*) for comparison with the new species.

*Mesoprion obscurus* Macleay, from the Endeavour River, has the pre-operculum scarcely notched, body crossed by 9 or 10 dark bands, and some silvery streaks below eye.

*M. roseigaster* Macleay, from Rockingham Bay, has deeper form, Sc. 40, eye large, and no fossa between it and nostrils.

*M. bidens* Macleay, from New Guinea, has the preoperculum triangularly gashed to receive the interopercular knob, a broad patch of vomerine teeth, and Sc. about 50, the scale rows ascending obliquely both above and below the lateral line.

The types of *Genyoroge unicolor* Alleyne and Macleay, from Percy Islands, Queensland, are small specimens, yet they bear a superficial resemblance to my new species, which might well be identified as *unicolor* from the original figure. However, the actual specimens have more than 50 transverse scale-rows which ascend obliquely both above and below the lateral line, an increased number of nuchal scales, vomerine teeth in a broader triangular band, and palatine teeth in a narrow strip, whilst the second and third anal spines are subequal. As the name *unicolor* was anticipated by Castelnau, I renamed this species *Lutjanus castelnavi* in 1928.

<sup>6</sup> Cuvier and Valenciennes, Hist. Nat. Poiss. ii, 1828, p. 414, pl. xxxviii. Coromandel, etc.

<sup>7</sup> Ogilby, Ann. Qld. Mus. ix, 1908, p. 5.

<sup>8</sup> Day, Fish. India, 1875, p. 43, pl. xiii, fig. 2.

<sup>9</sup> Forskal, Deser. Anim. 1775, p. 46.